

REMARKS

The attorneys of record have changed and a Revocation and Power of Attorney has previously been submitted. The Patent Office is kindly asked to update its records to reflect the new attorney docket number of I084 1250.

In the Office Action mailed September 12, 2003, the Examiner objected to the drawings under 37 CFR 1.83(a) for failing to show the cutting insert being thicker in the center than at the edges, as recited in claims 5 and 6.

As to the merits in view of the prior art, Claims 1-6 were rejected under 35 USC 103(a) as being unpatentable over EP 0 505 574 to Arai et al.

Claims 1-6, as previously presented in the amendment filed June 30, 2003, and new claims 7-15, are being submitted for the Examiner's consideration.

Objection to the Drawings

Figs. 4 and 7 have been amended in response to the Examiner's objection to the drawings.

Amendment to the Specification and to Fig. 5

The specification and Fig. 5 have been amended to add a reference symbol pointing out a 'plane of rotation of the cutting tool', a feature that appears in new claims 7 and 8.

New Claims 7-15

New dependent claim 7 recites that "each cutting insert is oriented symmetrically with respect to a plane of rotation of the cutting tool, and has a pair of equally leading side corners." Support for this language can be found in the original specification at page 5, lines 20-23, and this feature can be seen in Fig. 5.

New independent claim 8 is directed to a rotary cutting tool in which “each cutting insert is oriented symmetrically with respect to a plane of rotation of the cutting tool, and has a pair of equally leading side corners.” In addition, Claim 8: (a) does not recite the presence of “chip clearance recesses”; (b) does not qualify the pocket base as being “tangentially extending”; and (c) does not qualify the pocket rear surface as being “generally radially extending”, as recited in claim 1. New dependent claims 9-13 are substantially similar to claims 2-6, and new dependent claims 14-15 further define orientations of each pocket base and each pocket base rear surface, respectively.

Rejection Under 35 USC 103

Applicants traverse the rejection of claims 1-6. Pending independent claim 1 recites, inter alia, that:

- (1) each insert receiving pocket has a pocket base that is “tangentially extending”;
- (2) each pocket base has a trailing end connected to a pocket rear surface that is “generally radially extending”; and
- (3) “at least outer portions of each upper and lower component cutting edge extending generally inwardly from adjacent side corners and at least outer portions of each component side surface extending generally inwardly from adjacent side corners”.

As to items (1) and (2), Arai’s Figs. 6 and 7 clearly show that Arai does not disclose either a “tangentially extending base pocket” or a “generally radially extending pocket rear surface, as claimed in claim 1.

As to item (3), at the top of page 3 of the September 12, 2003 office action, the Examiner readily conceded that Arai does not disclose this property, stating: “Arai’s side surfaces and cutting edges extend inwardly (at 110), but not at the outer portion thereof (at 109).” To formulate a rejection of these claims, however, the Examiner:

(a) took Official Notice that it is common for milling inserts to have acutely angled corners, citing the Betman et al '137 patent or the Lynde '958 patent; and

(b) continued by stating that “[i]t would have been obvious to one of ordinary skill in the art to have made Arai’s insert corners be acutely angled, even at the outer portion, as is well known and exemplified by Betman and Lynde, in order to achieve the superior corner cutting that comes with acutely angled insert corners.”

In other words, that Examiner asserted that one of ordinary skill in the art would find it obvious to modify Arai’s plane faces 109 so as to make the entirety of each side face 108 (which comprises plane faces 109 arranged on either side of concave face 110) concave.

It is submitted, however, that this modification certainly is not obvious because Arai specifically and unambiguously teaches away from such a modification at column 7, lines 12-20:

Moreover, since the plane faces 109 are formed on the opposite ends of the side face 108, the bit 101 can be rigidly secured to the bit mounting seat 106 by adhering the plane faces 109 to the first and second side walls 106b and 106c of the bit mounting face 106. In this connection, when the whole side face 108 is formed into a concave face, the bit cannot be rigidly secured to the first and second side walls 106b and 106c, so that many type of problem such as chatter will result. (emphasis added)

Since doing what the Examiner suggests would lead to chatter, as pointed out by Arai himself, it is submitted that it would not be obvious “to have made Arai’s insert corners be acutely angled”.

In view all of the foregoing, it is submitted that pending claim 1, and all claims depending thereon, define over Arai.

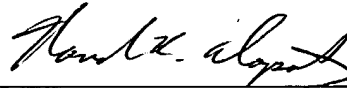
With particular regard to new dependent claim 7 and also new dependent claim 8, it is submitted that Arai, which discloses a face milling cutter (see Arai Figs. 6 & 7), clearly does not disclose a tool in which “each cutting insert is oriented symmetrically with respect to a plane of rotation of the cutting tool, and has a pair of equally leading side corners.” Accordingly, it is submitted that claims 7 and 8, and all claims depending on claim 8, are patentable.

Reconsideration of the application is requested. Claims 1-15 are believed to be in allowable form and define over the prior art of record. An early notice of allowance is requested so that the application may proceed to issue.

No fee is believed to be due for this submission. Should a fee be required, the Commissioner is authorized to charge any such fee to Womble Carlyle's Deposit Account No. 09-0528.

Respectfully Submitted,

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